

City of Austin



GUIDELINES FOR TRAFFIC IMPACT ANALYSIS

December 8, 2016

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I. Background

The purpose of the Traffic Impact Analysis (TIA) Guidelines is to provide development and transportation consultants with the framework to prepare TIAs for review by The City of Austin. The information included in these guidelines provide guidance for preparing and submitting TIAs. These guidelines also outline the basic information that as a minimum should be contained in a TIA. The TIA will be valid for a period of up to five years, dating from the approval of the application by the appropriate Commission.

A TIA is required to assess the transportation aspects of a proposed development that has the potential of generating new trips. New trips could be vehicular trips, transit trips, pedestrian trips, or bicycle trips. New developments or re-developments generally change the travel patterns through transit, vehicular traffic, pedestrian traffic, as well as bicycle traffic in and adjacent to the area where it is located.

A TIA documents the following and provides information on the projected traffic generated by a proposed development:

- (a) assesses the effect of the proposed development on the transportation system near the development;
- (b) identifies the potential operational, geometric, or safety impacts or consequences and recommends action(s) to address the concerns;
- (c) consists of, but is not limited to, capacity analysis, safety and geometric analyses, active modes and transit connectivity analyses, conceptual plan/design to support recommended actions or improvements where applicable.

Occasionally, a TIA is accompanied by a Neighborhood Traffic Analysis (NTA), which is a smaller-scale traffic study that assesses the effect of a proposed project on residential streets. The scope of a NTA is limited to evaluation of residential streets and identification of mitigation measures to minimize adverse traffic effects.

II. Authority and Determination of the Need for a TIA

According to the current Land Development Code, Chapter 25, Article 3, Section 25 – 6, an applicant submitting a site plan application or a zoning or rezoning application must submit a traffic impact analysis if the expected number of trips generated by a project exceeds 2,000 vehicle trips per day or the Department Director determines a TIA is required.

An applicant or applicant's consultant must submit a TIA determination worksheet to Development Services Department for review. The TIA determination worksheet contains trip generation information and details of the proposed development including, but not limited to, project location, land use, access points, and density of development, phases of proposed development, and timeline / opening year of the development. Development Services Department reviews the TIA determination worksheet and determines whether a TIA is required.

III. Projects Not Warranting a TIA

For the project or development for which a TIA is not required, the applicant must mitigate any adverse effects of the traffic generated from a proposed development. Adverse effects can be mitigated through system improvements, limited to the following:

- (a) sidewalks and curb ramps;
- (b) traffic signs, markings, and upgrades to signal infrastructure;
- (c) traffic calming devices;
- (d) bicycle lanes or upgrades to bicycle facilities;
- (e) rectangular rapid flashing beacons;
- (f) pedestrian refuge islands;
- (g) pedestrian hybrid beacons;
- (h) urban trail improvements;
- (i) right-of-way dedications; and
- (j) measures to limit transportation demand.

Required system improvements will be focused to the transportation system adjacent to the proposed development and within the boundaries of the site. Based on impacts from

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the development, staff may require system improvements outside the boundaries of the site, but system improvements may not be farther from the proposed development than:

- (a) one-quarter mile; or;
- (b) three-fourths of a mile, for an improvement required to provide access between the proposed development and a school, bus stop, public space, or major roadway as determined in the transportation plan.

Mitigation of system improvements without a TIA is guided by transportation plans and engineering studies, which may include adopted master plans, neighborhood plans, corridor reports, and regulating plans.

The following documents are available to applicants and consultants for reference before and during the TIA process:

- (a) City of Austin's Sidewalk Master Plan 2009:

https://www.austintexas.gov/sites/default/files/files/Public_Works/Sidewalk_Master_Plan.pdf

City of Austin's Sidewalk Master Plan Update 2016:

http://www.austintexas.gov/sites/default/files/files/Public_Works/Street_%26_Bridge/DRAFT- Sidewalk Master Plan Update Adoption 4-18-16.pdf

City of Austin's Absent Sidewalk System (Draft):

http://www.austintexas.gov/sites/default/files/files/Public_Works/Street_%26_Bridge/SWMP_Update_Absent_Sidewalks_Prioritization_draft_022416.pdf

- (b) City of Austin's Bicycle Master Plan 2014:

https://austintexas.gov/sites/default/files/files/2014_Austin_Bicycle_Master_Plan_Reduced_Size_.pdf

- (c) City of Austin's Current List of Signal Requests:

http://www.austintexas.gov/sites/default/files/files/Transportation/SIGNAL_RANKING_MAY_2015_PUB.pdf

- (d) City of Austin's Current List of Pedestrian Hybrid Beacon (PHB) Requests:

http://www.austintexas.gov/sites/default/files/files/Transportation/PHB_RANKING_MAY_2015_PUB.pdf

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[AY_2015_PUB.pdf](#)

- (e) City of Austin's Urban Trail Master Plan:
http://www.mediafire.com/download/qusnf4gg3h4v4z7/UTMP_online.pdf
- (f) City of Austin's Adopted Neighborhood Planning Areas:
<https://austintexas.gov/page/adopted-neighborhood-planning-areas-0>
- (g) Capital Metropolitan Transportation Authority (Capital Metro) Service Plan 2020:
<http://www.capmetro.org/sp2020/>
Capital Metro Connections 2025 (Draft):
<http://connections2025.org/>
- (h) Texas Department of Transportation (TxDOT) Texas Transportation Plan 2040
<http://txdot.gov/inside-tdot/division/transportation-planning/statewide-plan.html>
- (i) TxDOT Statewide Transportation Improvement Program:
<http://www.txdot.gov/inside-tdot/division/transportation-planning/stips.html>
- (j) Travis County Land Water and Transportation Plan:
<https://www.traviscountytexas.gov/tnr/lwtp>
- (k) Williamson County Long-Range Transportation Plan:
<http://www.wilco.org/tabid/5361/Default.aspx>

Applicants and/or their consultants are responsible for continuously checking any update(s) to these plans or lists in the City of Austin website. Other resources may be required by City staff.

As part of the TIA Determination Worksheet, a Technical Review Committee (TRC) consisting of staff from Development Services Department (DSD), Austin Transportation Department (ATD), Planning and Zoning Department (PZD) and TxDOT, will determine the appropriate mitigation needed if a TIA is not warranted.

IV. Projects Warranting a TIA: Scoping Process

If the review of the TIA Determination Worksheet determines that a TIA is required for a proposed development, the applicant's consultant must submit a proposed scope of a TIA.

The proposed scope of a TIA should include, but is not limited to, the following:

- (a) project location map;
- (b) land uses, size, and density of the proposed development;
- (c) phases and timeline / opening year of the proposed development;
- (d) estimated trip rates, peak hour and daily trips generated by the proposed development;
- (e) proposed internal capture rates where applicable;
- (f) proposed pass-by trip reduction rates where applicable;
- (g) proposed transit trip credits where applicable;
- (h) proposed trip distribution;
- (i) background traffic information considering annual growth and pipeline projects; and
- (j) list of existing and future intersection(s) and interchange(s) to be analyzed.

Proposed developments will uniquely impact the transportation system due to their varying sizes, mixes of land uses, orientation to adjacent streets, etc. These guidelines should be followed when proposing existing and future intersections to be analyzed:

- (a) intersections with driveways and public streets providing direct access to the proposed development;
- (b) intersections including an arterial or highway within one half-mile of the proposed development;
- (c) intersections including an arterial or highway farther than one half-mile from the proposed development if the proposed development includes land uses with regional draws (e.g., major shopping centers, planned residential communities, hospitals, schools, recreational/sports facilities, etc.); and
- (d) intersections including an arterial, highway, collector, or neighborhood street with significant existing or future peak-hour congestion or safety issues.

The TRC review the applicant's proposed scope and determine any necessary amendment(s). DSD sends a signed copy of the approved TIA scope to the applicant's consultant.

Upon receipt of the approved TIA scope, if the applicant's consultant has questions regarding the scope, they should communicate with DSD, and if necessary, request a meeting with the TRC. After all questions have been addressed, a signed copy by the applicant's consultant must be returned to DSD documenting acceptance of the scope's provisions. TIAs received without an approved scope will not be reviewed by the TRC.

Projects in the City's ETJ will be reviewed/discussed with other regulatory agencies (TXDOT, County, etc.). If as part of this review/discussion, these agencies determine that a TIA is required, the process for scoping and preparing the TIA will follow these guidelines and will be reviewed by the City.

V. Technical Guidelines and Requirements in TIA Scopes and Reports

Trip Generation Rates: In assessing the trip generation potential of a site:

- (a) The latest edition of the Institute of Transportation Engineers' (ITE) *Trip Generation* is used as a guide. While using average trip rates or trip rates from derived equations included in *Trip Generation*, engineering judgement should be applied, taking into account site specific elements, such as the scale, location or intensity of the development. Appropriate use of rates and equations must follow the ITE *Trip Generation Handbook*.
- (b) Mixed-use trip generation estimation methods, including NCHRP Report 684 and EPA MXD, may be proposed to Development Services Department for discussion and agreement. These methods are most applicable to the Urban Core of the City where population density, land use diversity, and availability of alternative modes of transportation are present. The Urban Core is defined as the area bounded by Martin Luther King Jr Boulevard, IH-35, Barton Springs Road, and Lamar Boulevard.

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- (c) Trip generation rates from local trip generation studies are encouraged and may be proposed to Development Services Department for discussion and agreement. The trip generation study must be completed during the times of day and days of the week in which the analyses will be completed and must follow ITE guidelines.
- (d) When using non-standard trip generation rates, the applicant's consultant must submit the appropriate documentation that supports the proposed trip rates (e.g., data obtained from trip generation surveys of similar sites, rationale of first principles, comparison of trip rates, etc.).

Internal Capture rates, Pass-by reduction rates, and Transit Trip credit: In assessing the internal capture, pass-by and transit trips generated by a development:

- (a) Different factors should be considered in determining internal capture, pass-by trips, and transit trip credit. Factors include but not limited to, the following: location of the proposed development, land use mix of development, size and intensity of development, local context, adjacent roadway system, transit connectivity and access to proposed development.

NCHRP Report 684, EPA MXD, and the ITE *Trip Generation Handbook* may be consulted for internal capture and/or pass-by trip reduction rates. However, the internal capture and/ or pass-by trip estimation from these publications may not be readily applicable considering the local context, location of proposed development, type and size of development, adjacent roadway system, and transit connections. Proper engineering judgment should be applied.

Trip Distribution and Assignment: While distributing site generated trips, applicant's consultant should consider existing traffic patterns in the area, availability of connecting roads, proximity to other attracting land uses, and trip-to-work data from Capital Area Metropolitan Planning Organizing (CAMPO). While assigning site generated trips, applicant's consultant should consider access to the proposed development in relation to the major roadway connections, orientation of development site, ease of access, reliability of trip time, shortest time path, and connectivity. Applicant's consultants are encouraged to submit the trip distribution as well as the proposed site driveway locations in the proposed TIA scope for review by the TRC.

Traffic Count Data and Data Collection: Traffic counts (vehicular, pedestrians, and bicycle) are the foundation for most of the analyses and proper assessment. When obtaining/using traffic counts, the following are to be considered:

- (a) All sources of information are to be provided (i.e., who completed the count, date of completion, peak periods).
- (b) Electronic files and hardcopies containing the raw and summarized data are to be included in the report (on CD contained within the document).
- (c) Data validity varies depending of the area that is being studied. For established areas, the City may accept data up to two-years-old. For other areas, the City will not accept data beyond one-year-old unless provided justification and adjustment(s).
- (d) Applicant's consultants are encouraged to collect traffic count data when schools are in session (September to April). If traffic count data is collected when the schools are not in session, appropriate adjustment factors must be determined and agreed upon by the reviewing staff.
- (e) Whenever data is adjusted or modified from what was observed in the field (e.g., balanced traffic volumes, deletion of illegal movements), rationale for the modification is to be provided with documentation. Modified traffic volumes shall be clearly identified in the exhibits.
- (f) In cases where additional data is collected, the methodology used should be documented and included in the TIA.

VI. TIA Report Format and Requirements

Introduction and Background: This section should contain a brief overview of the purpose of the study, location of the site, land use, the type of project supported by the study. Other related studies/applications associated with the proposed development site are useful information.

Existing / Background (No-Build) Operating Conditions: This section is to provide a detailed overview of the available transportation infrastructure in the area surrounding the proposed development site, as well as to identify any issues or concerns that precede/follow development. This section must include the following components when applicable.

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Detailed description of the transportation system with figures outlining traffic controls, intersection lane configuration with dimensions, bicycles routes, speed limits, parking restrictions, bus stops, directional signs, pedestrian signage, surrounding land uses, driveways, distance of driveways to adjacent intersections, railway crossings and any other information that may affect the intersection performance during the selected analyses periods (typically morning and afternoon). All these data are typically collected through site visits. It is advisable to include photos outlining particular situations. e.g., closely spaced driveways, non-standard intersections, etc. Functional classification of existing and future roadways should be presented in this section.

Short-term changes in the area are to be documented in this section. These changes shall be reflected in the analyses and the consultant is expected to do the due diligence in their review of system changes. If the scheduled date of the change falls within the timeframe of the study of the application, changes must be reflected in the study.

For future background operating conditions, changes to the intersection configuration shall be provided in both descriptive and graphic forms. Traffic volumes are to be presented in both graphic and tabular form. Daily traffic volumes are to be presented in this section when relevant. Daily traffic volumes can be obtained from actual counts or estimated using proper expansion factors if appropriate.

While establishing background traffic volumes for future horizons, applicant's consultant should consider annual growth rate and pipeline projects. The growth rate can be obtained from comparing counts from previous years and based on the TIA scoping document. Background traffic volumes should also include addition of traffic volumes from other approved but not-yet built developments. Documentation for not-yet built development must be included in the Appendix.

Post Development (Build) Operating Conditions: This section is to provide a detailed description of the proposed development including land use, densities, access points, and any other details that may have an impact on the transportation system. A site plan (or conceptual site plan) must be included in this section.

Site traffic generation should be estimated based on the trip rates as approved in the TIA

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scope. Site traffic distribution and assignment should be completed based on the guidelines noted in Section V. Post-development traffic volumes are obtained from superimposing the site-generated traffic onto the background traffic volumes.

Capacity Analysis for Non-Urban Core: The Capacity Analyses for each intersection/site access and period as outlined in the TIA scope should be included in this section.

A description of the methodology and software (Synchro) used to complete the assessment should be included. Signal Timing Plans should be obtained from Arterial Management Division within the City of Austin Transportation Department and be used for the analyses. City of Austin timing sheets must be included in the Appendix of the TIA. In the event of a proposed or planned traffic signal, a reasonable signal timing plan must be provided. All intersections must be modeled in one Synchro file (including unsignalized intersections). SIDRA software should be used for any capacity analysis at a roundabout, if applicable, and for unsignalized intersections, if possible. Synchro files must be in real world coordinates.

Capacity analysis should be completed for the following scenarios. Additional peak hours, such as a midday or special event, may be required if the proposed development would generate trips during non-standard periods:

- (a) Existing Conditions – AM and PM Peak Hours;
- (b) Opening Day Background (No-Build) Conditions – AM and PM Peak Hours;
- (c) Opening Day Post Development (Build) Conditions with No Mitigation – AM and PM Peak Hours;
- (d) Opening Day Post Development (Build) Conditions with Mitigation(s) – AM and PM Peak Hours;
- (e) Future Horizon(s) Background (No-Build) Conditions – AM and PM Peak Hours;
- (f) Future Horizons(s) Post Development (Build) Conditions with No Mitigation – AM and PM Peak Hours; and
- (g) Future Horizons(s) Post Development (Build) Conditions with Mitigation(s) – AM and PM Peak Hours.

The results from the capacity analysis for all the scenarios should include, but not limited to, the following:

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- (a) Intersection Level of Service (LOS) by individual movements at an intersection;
- (b) Volume / Capacity (v/c) ratio by individual movements at an intersection;
- (c) Delay (veh/sec) by individual movements at an intersection;
- (d) 95% Queue length (feet) by individual movements at an intersection; and
- (e) Overall intersection LOS.

The latest Highway Capacity Manual (HCM) capacity analysis results should be presented in a tabular format (preferably in 11"x17") for all the scenarios noted.. Synchro Lane/Volume/Timing reports should be presented only if Synchro is unable to analyze intersection operations using the latest HCM methodology. Appropriate and minimum 12-point font should be used for proper presentation and review.

When results obtained from analyses completed in Synchro show poor performance (i.e., excessive queue lengths with the potential of blocking intersections, conflicts with rail crossings), the consultant shall validate the results with observations in the field for existing conditions or SimTraffic simulation for post development/build conditions.

Poor performance is defined by LOS E or F, and / or Volume/Capacity ratio over 0.95 for individual movements or overall intersection. Poor performance may also include extensive queues for movements that extend beyond available storage and block other travel lanes, or extensive queues on through movements that extend past and blocks adjacent intersections. If No-Build Conditions are LOS D or better and Volume / Capacity ratio less than 0.95, Opening Day Post Development (Build) Conditions with Mitigation(s) and Future Horizons(s) Post Development (Build) Conditions with Mitigation(s) should maintain LOS D or better and Volume / Capacity less than 0.95 for individual movement(s) and overall intersection during the peak hours evaluated. If No-Build Conditions are LOS E or F and / or Volume / Capacity ratios are over 0.95, Opening Day Post Development (Build) Conditions with Mitigation(s) and Future Horizons(s) Post Development (Build) Conditions with Mitigation(s) should restore delay to No-Build individual movements Conditions at a minimum for individual movement(s) and overall intersection during the peak hours evaluated. Any extensive queues blocking travel lane(s) and / or adjacent intersection(s) expected in the Post Development (Build) Conditions should be mitigated to address any potential safety and mobility concerns.

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Definition of poor performance noted above is provided as a general guidance for TIA preparation. It is understood that development projects vary in nature, scale, location, and impacts on transportation infrastructure. The purpose was to provide a general guidance on the acceptable traffic parameters in the TIA. But it should be noted that each development project will be assessed on case by case basis considering nature, scale, location and impacts of the proposed development(s) on transportation infrastructure.

Capacity Analysis for Urban Core: Development intensities may justify the need for different considerations of acceptable operating conditions. LOS F and Volume/Capacity ratios greater than 0.95 are generally considered poor performance. Within the Urban Core, LOS E or LOS F may be considered acceptable based on the adjacent transportation system and reasonable constraints to restore or improve operations to LOS E or better. Operational and safety improvements must be included in the TIA to provide standard and alternative solutions.

If improvements are recommended in the TIA, they must be supported with analysis as per above and conceptual plans or aerial photos. For example, if an auxiliary lane is recommended, then capacity analyses demonstrating effectiveness and photos/conceptual plans showing availability of right-of-way are to be provided. Planning level, itemized cost estimates for each improvement must be provided with supporting documentation.

Electronic files and hardcopies containing the raw and summarized data are to be included in the report (on CD provided).

The following maps should be included in the TIA:

- (a) A map showing all background projects and estimated trips for each project;
- (b) A map showing all roadways and driveways analyzed (labeled and dimensioned); and
- (c) An aerial map of all intersections with roadway improvements (dimensioned), including above ground utilities identified.

Safety / Geometric Review: If any potential safety or geometric issue(s) are perceived

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from the proposed development based on the analysis presented in the TIA, proper mitigation measures must be recommended to address capacity, safety, and/or geometric issues. If the proposed development is located in an area of existing safety concerns, analysis should be completed to identify whether or not the proposed development would worsen the existing safety issue(s). Appropriate mitigation measures shall be recommended to address any safety issue(s) identified.

Sight Distance: Sight distance calculations shall be provided in the TIA at proposed site driveways and newly created intersections of public streets proposed by the development. The TIA shall include vertical and horizontal site line profiles for both Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD). The profiles must document the required and actual sight distance in relation to field conditions.

SSD provides a view of the road that is sufficient to allow drivers to stop in order to avoid a collision with an obstruction on the road. ISD allow for the safe maneuver of a vehicle from the stopped position at an intersection. Sight triangles at an intersection must be clear of obstructions that might block a driver's view of potential conflicts.

SSD and ISD calculations shall be based on the most recent edition of the American Association of State Highway and Transportation Officials (AASHTO) manual.

If minimum sight distances cannot be accommodated, the TIA shall recognize this and propose mitigation to provide safety improvements at driveways and intersections.

Active Modes / Transit Connectivity Review: If a trip reduction is granted for active modes and/or transit connections, appropriate improvements should be recommended for any missing links in active modes connections (sidewalk, bicycle lanes, pedestrian crossing, etc. as noted in Section III) at or adjacent to the proposed development.

VII. City of Austin TIA Submittal Requirements

A minimum of two (2) hard copies (containing TIA Report and Appendix with two (2) CD's) should be submitted to Development Services Department. The CD should contain an electronic (pdf) copy of the entire TIA (including Appendix), Synchro files with system for all conditions analyzed, background DXF or aerial format, and any conceptual plans or designs with proposed improvements, where applicable. Applicant's consultant shall include excel spreadsheet(s) with overall trip generation calculations, internal and pass-by trip capture calculations, site traffic distribution and assignment within the roadway system and site driveways to aid review of the TIA. Applicant's consultant additionally should contact TxDOT for their submission requirement(s).

Please note an incomplete TIA will not be reviewed. The applicant is tasked to provide all necessary and required information at the time of submittal to permit. Incomplete submittals will be returned for completion.

VIII. Fiscal Participation Calculations

This section includes the method of determining the fiscal requirement of system mitigation identified within TIAs. Developers are expected to fully construct site mitigation measures equivalent to their fiscal participation as identified in the TIA and agreed with the City. For system improvements not adjacent to the project site, developers are expected to fully fund mitigation measures equivalent to their fiscal participation as identified in the TIA and agreed with the City.

Cost estimates for improvements identified in the TIA must be itemized and include all costs reasonably expected to design, permit, and construct them. These include, but are not be limited to, the following:

- (a) Engineering costs;
- (b) Contingency;
- (c) Mobilization costs;
- (d) Right-of-Way preparation;
- (e) Traffic control;

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- (f) Concrete and asphalt excavation and addition
- (g) Traffic signal equipment removal, relocation, and addition;
- (h) Traffic signs and markings;
- (i) Sidewalks and curb ramps;
- (j) Pavement resurfacing;
- (k) Drainage modifications; and
- (l) Right-of-way acquisition.

In addition, the cost estimates for the improvements must be for the year in which they are intended to be built. Cost for future years must be based on the ENR construction cost index for the past 10 years.

In order to determine the level of fiscal participation for a development, the City of Austin utilizes a pro rata calculations based on critical movements to assess the impact of traffic generated by the development. This pro rata calculation compares No-Build to Build conditions for each movement at study intersections included in the TIA. The critical movement at each intersection is defined as the most negatively affected movement by site traffic at each intersection (i.e., the movement with the highest ratio of site-to-forecasted traffic). This financial participation is to be based on the applicant's cost estimates of the proposed mitigation and will be reviewed and approved by the City.

Below are examples of pro rata calculations for common two scenarios: addition of a turn lane and installation of a traffic signal.

Example 1: Addition of a Turn Lane

In order to mitigate unacceptable operational conditions in the Build scenario at the study intersection of Street A and Street B, the TIA has recommended an addition of an eastbound left-turn lane. The total cost of this improvement is estimated to be \$150,000.

The No Build (Forecasted) and Build (No-Build + Site) conditions for each movement at the study intersection are as follows:

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Forecasted										Site										Pro Rata (%) = Site / (Forecasted + Site)									
Street A										Street A										Street A									
Street B	Right	Thru	Left							Right	Thru	Left							Right	Thru	Left								
	80	650	30							15	0	0							16%	0%	0%								
				1240									98																
	Left	150								Left	40								Left	21%									
	Thru	90	Left	Thru	Right	60	790	90	Left	Thru	Right	20	Left	Thru	Right	18%	0%	14%	Left	Thru	Right								
			Right	200								Right	30								Right	13%							

The critical movement at this intersection for which the mitigation is proposed is the eastbound left-turn. The ratio of site to forecasted-plus-site traffic on the eastbound left-turn is 21% (40 site trips/190 forecasted plus site trips = 21%). As a result, the applicant's financial participation (Pro Rata Cost) for the mitigation (left-turn lane) at this intersection will be \$31,500 (0.21 x \$150,000).

Example 2: Installation of a Traffic Signal

In order to mitigate unacceptable operational conditions in the Build scenario at the study intersection of Street A and Street B, a TIA has recommended a Traffic Signal. The total cost of this improvement (traffic signal) is estimated to be \$250,000.

The No Build (Forecasted) and Build (No-Build + Site) conditions for each movement at the study intersection are as follows:

Forecasted										Site										Pro Rata (%) = Site / (Forecasted + Site)										
Street B	Street A										Street A										Street A									
	Right	Thru	Left								Right	Thru	Left								Right	Thru	Left							
	25	10	55								15	0	45								38%	0%	45%							
				840										35																
	Left	45								Left	25								Left	36%										
	Thru	400								Thru	0								Thru	0%										

In most cases, traffic volumes and delays on the minor street approach drive the need for signalization. The most negatively affected movement (by site traffic) at this intersection is the southbound left-turn; this movement is considered as the critical movement for signalization and pro-rata calculation. The ratio of site to forecasted-plus-site traffic on this critical movement is 45% (45 site trips/100 forecasted plus site trips). As a result, the applicant's financial participation for the mitigation (traffic signal) at this intersection would be \$112,500 (0.45 x \$250,000).

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The above examples are intended as guidance in performing pro rata calculations. Unique circumstances may exist that require engineering judgment.

Exceptions to Pro Rata: Pro rata share is considered the equitable target to determine cost participation of improvements. However, cost participation may exceed pro rata calculations under conditions limited to the following:

- (a) Clear safety risk results from the development's impact to the system if improvements identified in the TIA are not implemented;
- (b) A study intersection in the TIA is identified by the City as having a high crash rate and improvements identified in the TIA are not implemented;
- (c) Detrimental impact to system operations if improvements not made;
- (d) ROW dedication would be favorable to system improvements

IX. Frequently Asked Questions (FAQ's)

1) How long does it take to perform a TIA review?

Answer: The length to review a given submittal is dependent upon the intensity of the proposed development, as well as any site specific constraints or complicating factors. Past practice indicates several iterations of a TIA are often required before all comments are addressed and staff approval is granted.

2) Why do you need copies of the Synchro files in the submittal?

Answer: Review staff verify the simulation of traffic congestion by running the software application directly. The files provided are not shared with other agencies or interested parties.

3) What alternatives are there to conducting a TIA?

Answer: Alternatives are dependent upon the location and surrounding infrastructure, a given project may choose to participate in the funding or construction of previously identified improvements, either from a prior TIA or other traffic study or as identified by staff. Selection of this alternative is considered a part of the TIA waiver process.

4) Should calculations showing contributions to improvements or mitigations be included in a TIA?

Answer: Yes – cost estimates must be included in the TIA and shall include the itemized costs for mitigation improvements and pro rata costs following the methodology outlined in this document. A review and discussion of these construction costs and participation will be made following the final approval of the TIA.

5) What is 'rough proportionality'?

Answer: Rough Proportionality is the state-mandated way to verify that transportation improvements required of developers during the application process are appropriate and fair. Further information on the City of Austin Rough Proportionality policy can be found on the city website: <http://austintexas.gov/RoughProportionality>